OIPE
FEB 20 2004
PATENT & TRADEMARK OFFICE
JC56

FIG. 1
(PRIOR ART)

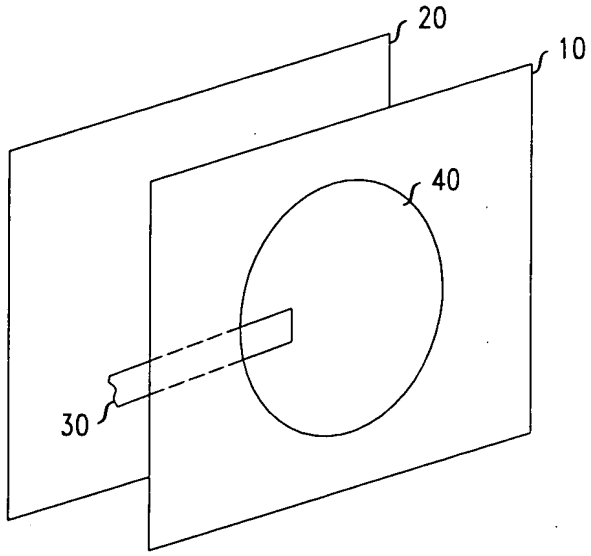


FIG. 2

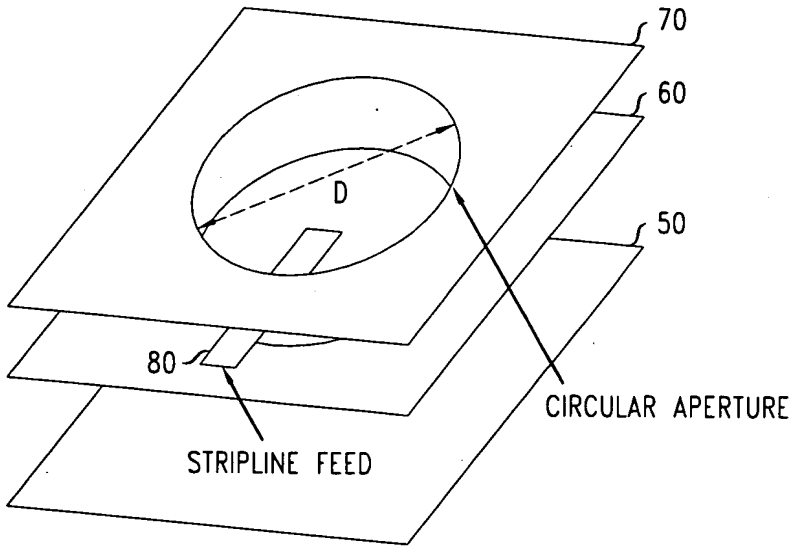


FIG. 3

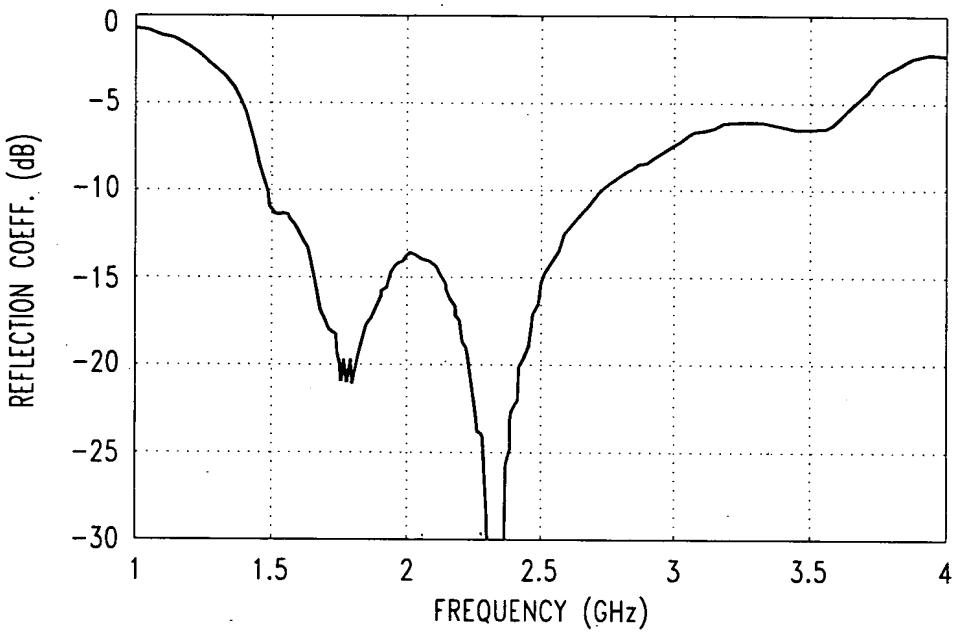

0
-5
-10
-15
-20
-25
-30
REFLECTION COEFF. (dB)
1
1.5
2
2.5
3
3.5
4
FREQUENCY (GHz)

FIG. 4

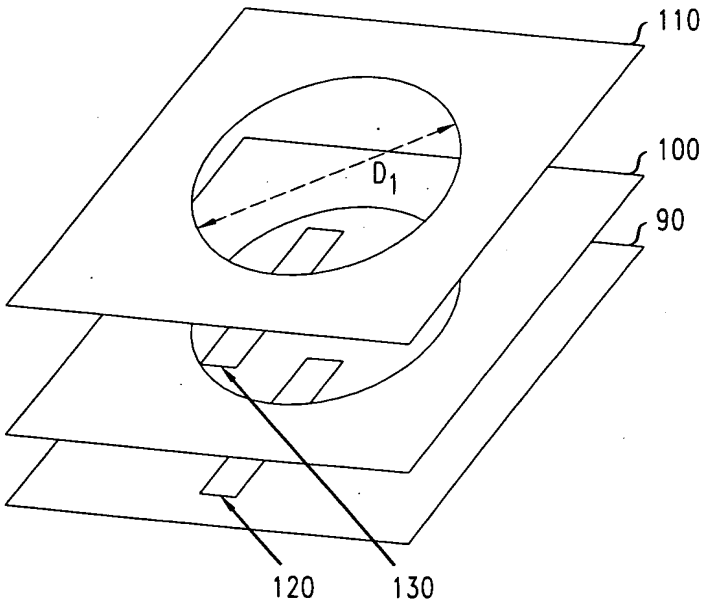

110
100
90
D_1
120
130

FIG. 5

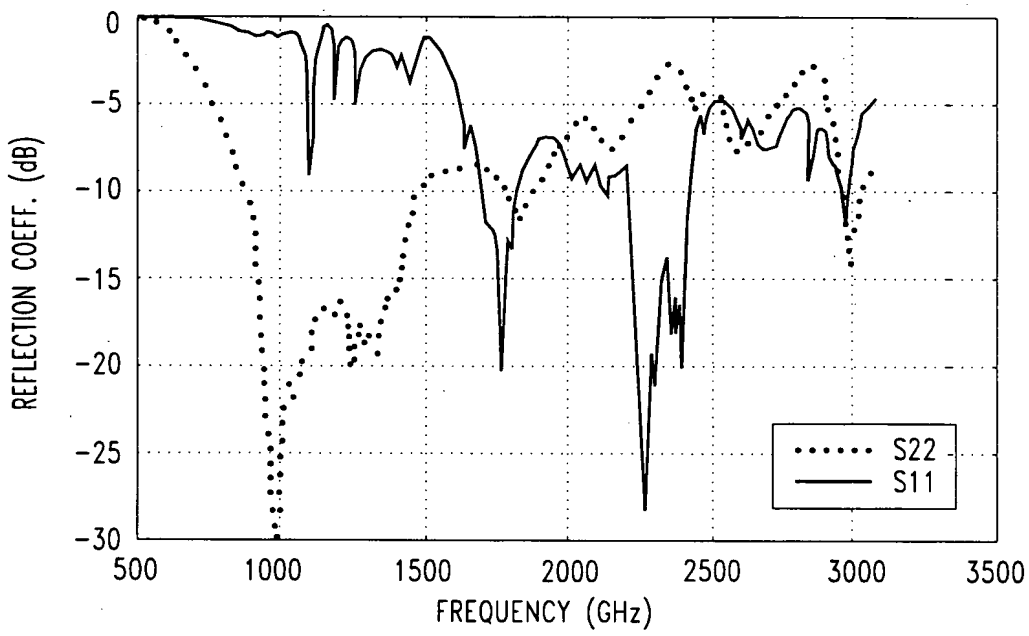
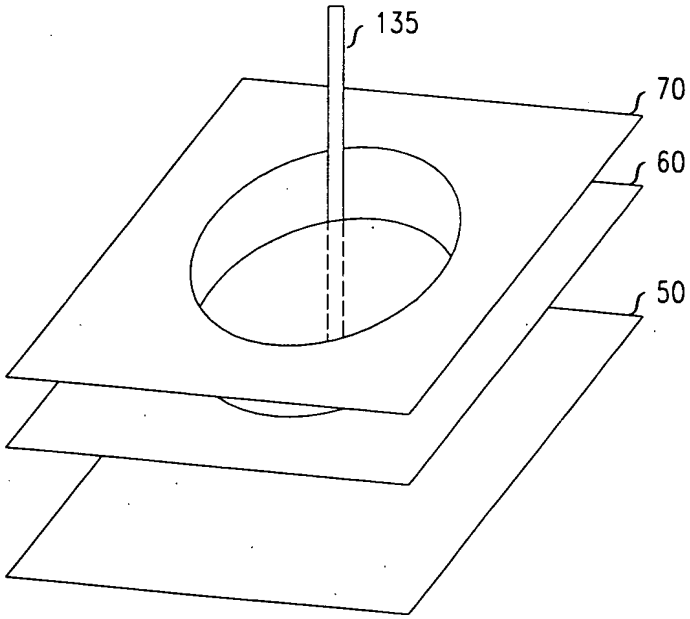

0
-5
-10
-15
-20
-25
-30
REFLECTION COEFF. (dB)
500
1000
1500
2000
2500
3000
3500
FREQUENCY (GHz)
S22
S11

FIG. 6


135
70
60
50

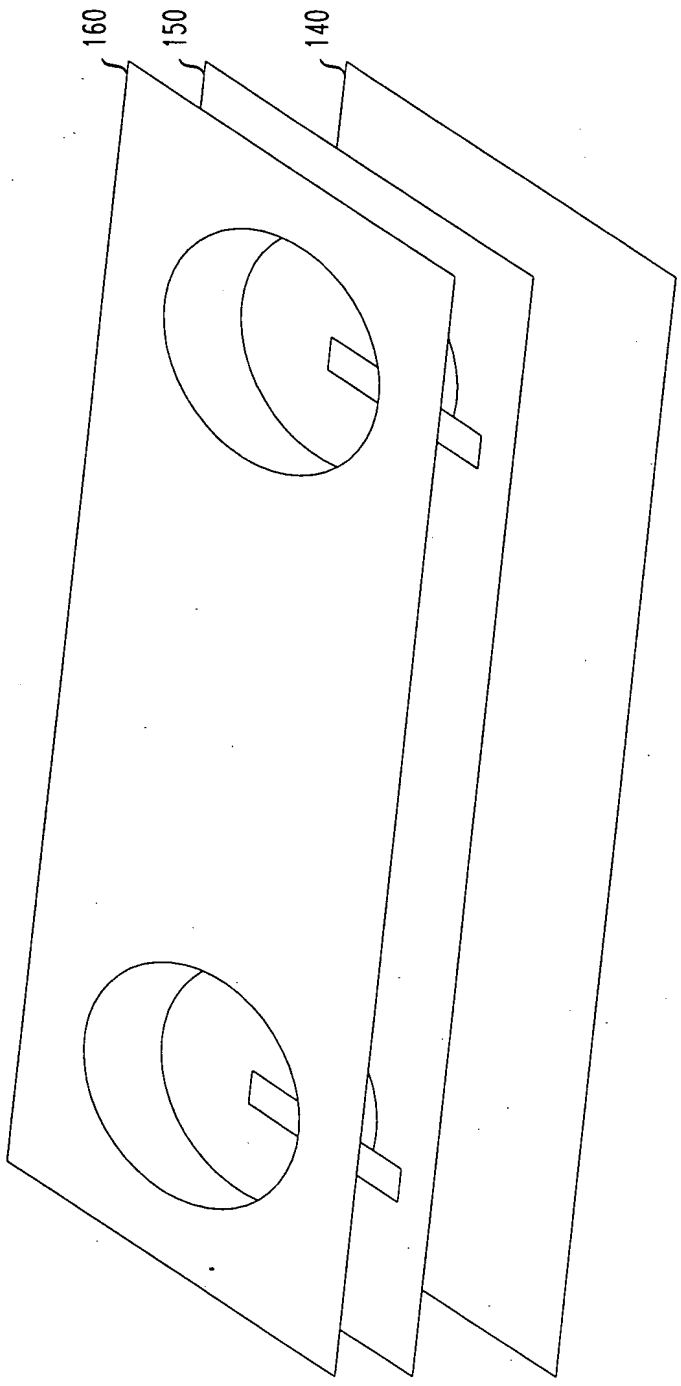
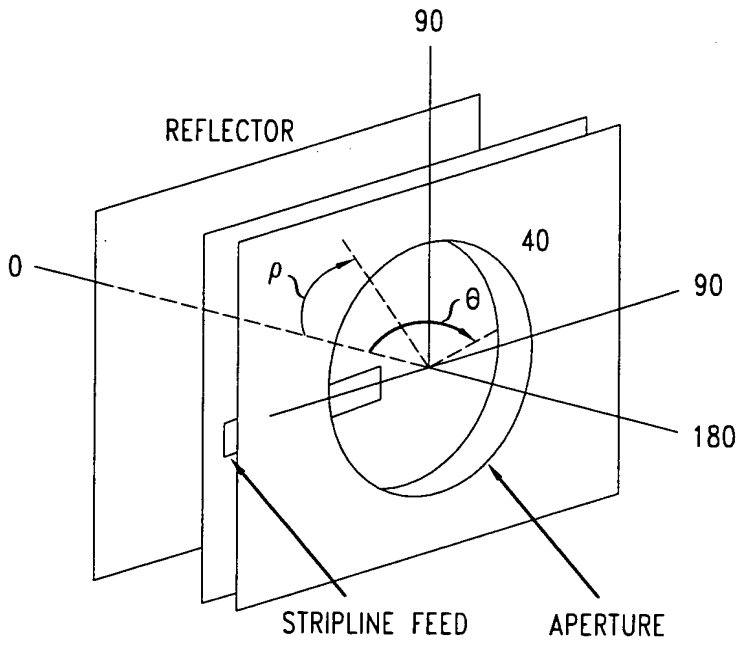


FIG. 7

FIG. 8



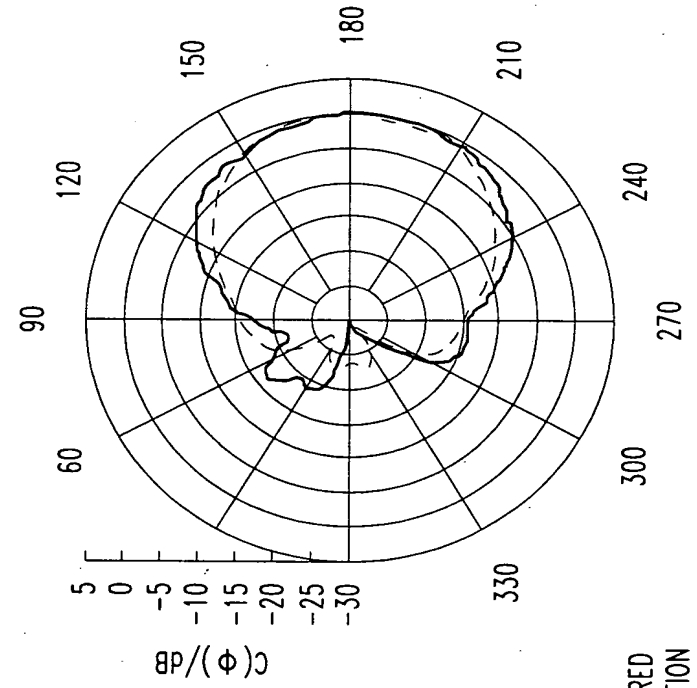

90
120
150
180
210
240
270
300
330
60
5
0
-5
-10
-15
-20
-25
-30
c(Φ)/dB

FIG. 10

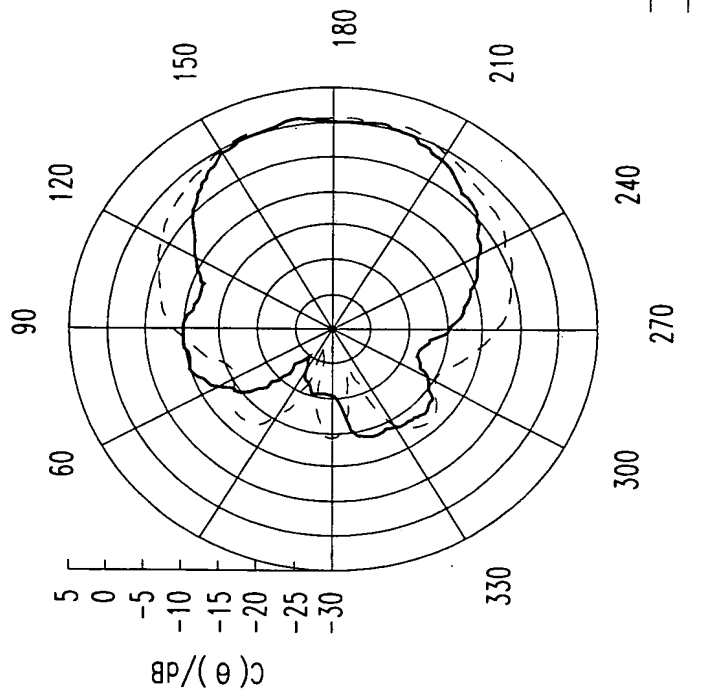

90
120
150
180
210
240
270
300
330
60
5
0
-5
-10
-15
-20
-25
-30
c(θ)/dB
MEASURED
SIMULATION

FIG. 9

FIG. 12

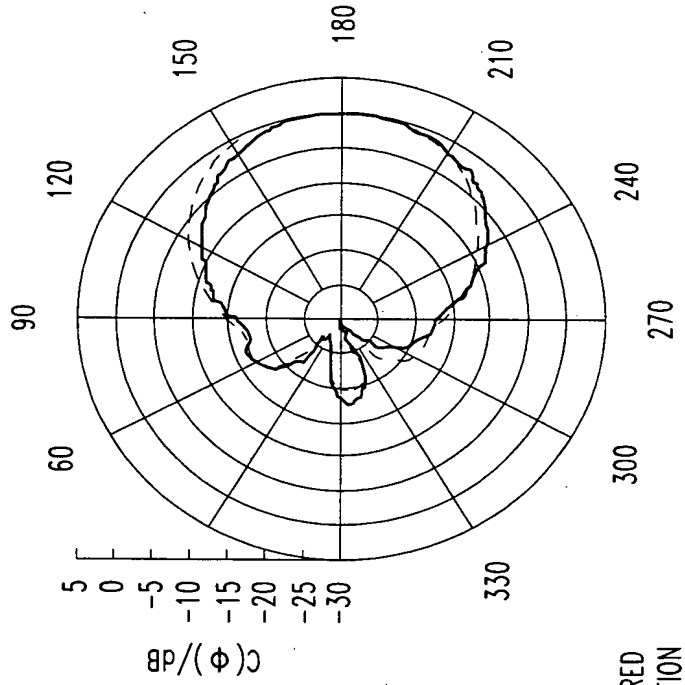
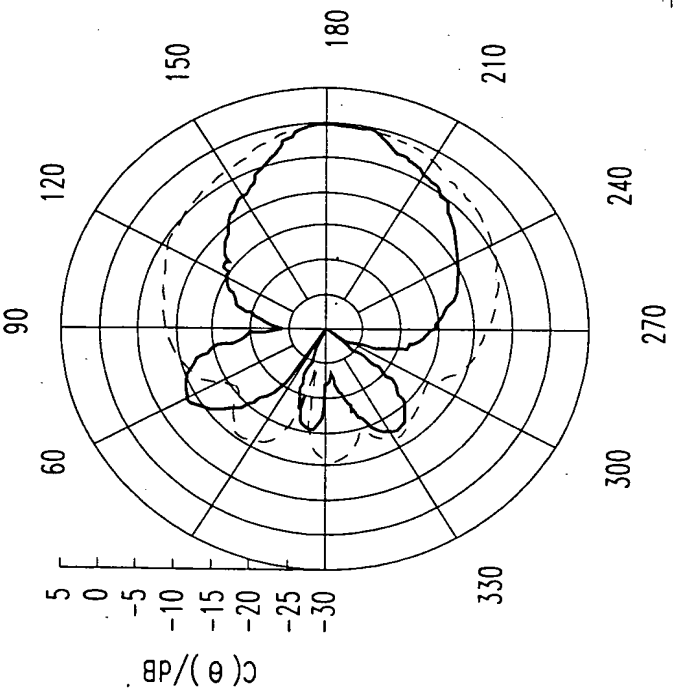


FIG. 11



MEASURED
SIMULATION

FIG. 13

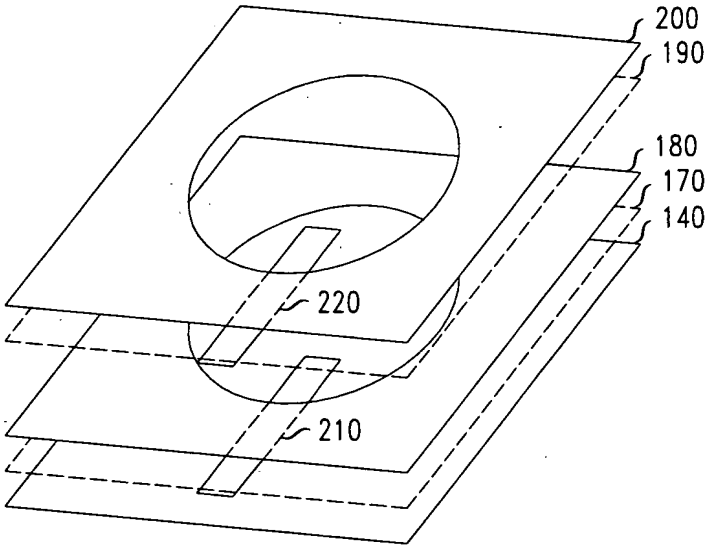

200
190
180
170
140
220
210

FIG. 14

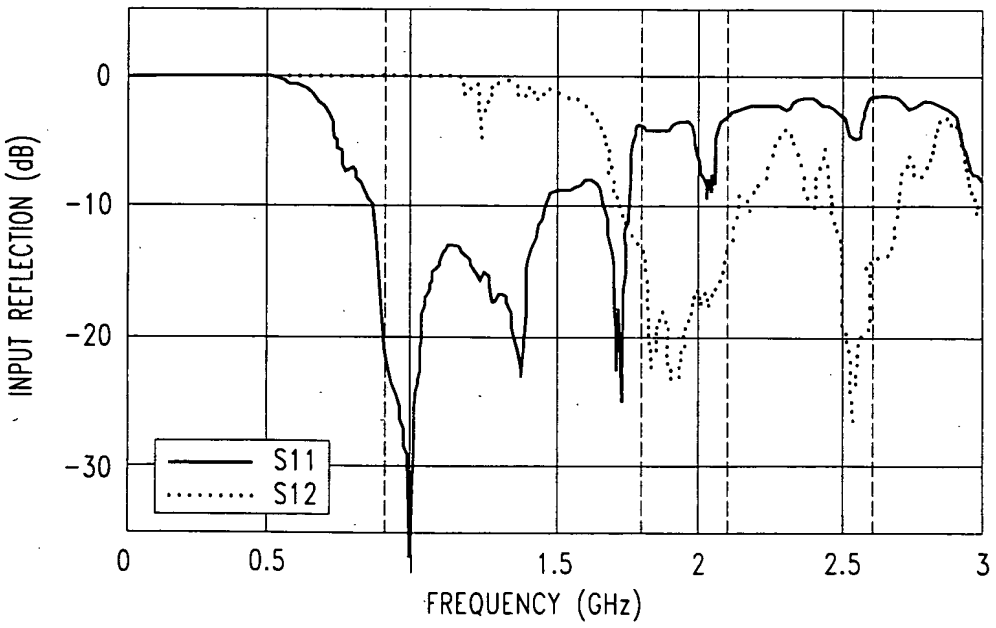
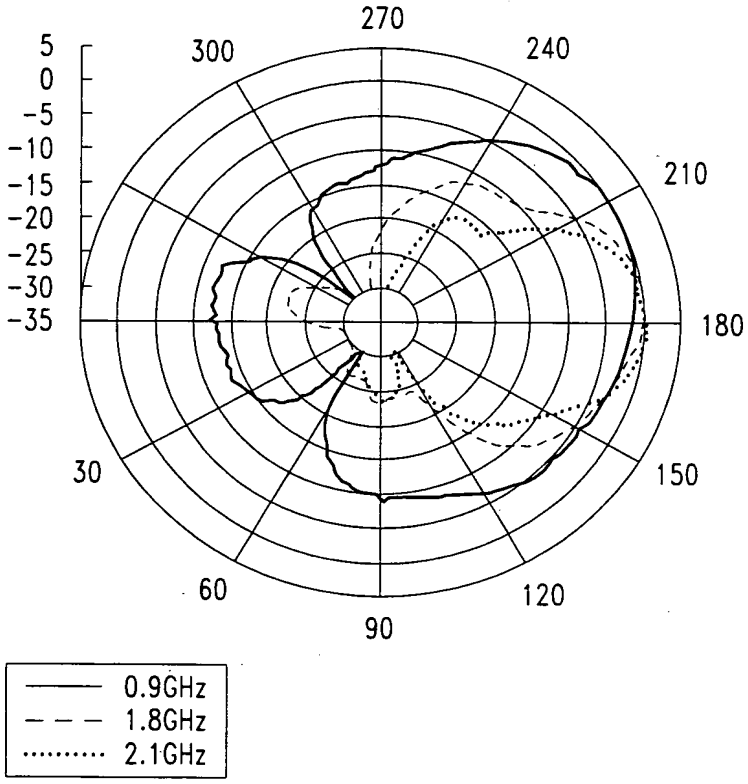

INPUT REFLECTION (dB)
0
-10
-20
-30
S11
S12
0
0.5
1
1.5
2
2.5
3
FREQUENCY (GHz)

FIG. 15


270
300
240
210
180
150
120
90
60
30
5
0
-5
-10
-15
-20
-25
-30
-35
0.9GHz
1.8GHz
2.1GHz